

CLAIMS

1. An integrated circuit (IC) comprising:
a primary conductor for an inductor;
a secondary conductor forming a loop in proximity to the primary conductor;
and
a switch coupled in series with the secondary conductor and operable to open or close the loop, wherein inductance of the inductor is varied by closing and opening the loop with the switch.
2. The integrated circuit of claim 1, wherein the primary conductor is formed in a spiral pattern.
3. The integrated circuit of claim 1, further comprising:
a current source coupled in series with the secondary conductor and the switch.
4. The integrated circuit of claim 3, wherein the current source is operable to direct current to flow in a first direction in the secondary conductor to reduce inductance of the inductor.
5. The integrated circuit of claim 3, wherein the current source is operable to direct current to flow in a second direction in the secondary conductor to increase inductance of the inductor.
6. The integrated circuit of claim 1, wherein the secondary conductor is located outside of the primary conductor.
7. The integrated circuit of claim 1, wherein the secondary conductor is located inside of the primary conductor.
8. The integrated circuit of claim 1, wherein the secondary conductor is located on a layer on top of the primary conductor.

9. The integrated circuit of claim 1, wherein the secondary conductor is located on a layer underneath the primary conductor.
10. The integrated circuit of claim 1, further comprising:
a third conductor forming a second loop in proximity to the primary conductor;
and
a second switch coupled in series with the third conductor and operable to open or close the second loop.
11. The integrated circuit of claim 1, further comprising:
a capacitor coupled in series with the secondary conductor and the switch.
12. The integrated circuit of claim 1, further comprising:
a reactive circuit element coupled in series with the secondary conductor and the switch.
13. The integrated circuit of claim 1, wherein the primary conductor is fabricated with a low-loss metal.
14. The integrated circuit of claim 1, wherein the secondary conductor is fabricated with a low-loss metal.
15. The integrated circuit of claim 1, wherein the switch is implemented with a metal-oxide semiconductor (MOS) transistor.
16. The integrated circuit of claim 1, wherein the secondary conductor is placed at a predetermined distance away from the primary conductor, the predetermined distance being selected based on a particular amount of change in inductance with the loop opened and closed.
17. The integrated circuit of claim 1, further comprising:
a capacitor coupled to two ends of the primary conductor, wherein the capacitor and the inductor form a resonator tank.

18. The integrated circuit of claim 1, wherein the inductor is part of a voltage controlled oscillator (VCO).
19. The integrated circuit of claim 1, wherein the inductor is part of a filter.
20. The integrated circuit of claim 1, wherein the inductor is part of an impedance matching network.
21. A device comprising:
 - a primary conductor for an inductor;
 - a secondary conductor forming a loop in proximity to the primary conductor;
 - and
 - a switch coupled in series with the secondary conductor and operable to open or close the loop, wherein inductance of the inductor is varied by closing and opening the loop with the switch.
22. The device of claim 21, further comprising:
 - a capacitor coupled to two ends of the primary conductor, wherein the capacitor and the inductor form a resonator tank.
23. An integrated circuit (IC) comprising:
 - a primary conductor for an inductor;
 - a secondary conductor forming a loop in proximity to the primary conductor;
 - a switch coupled in series with the secondary conductor and operable to open or close the loop, wherein inductance of the inductor is varied by closing and opening the loop with the switch; and
 - a capacitor coupled to two ends of the primary conductor, wherein the capacitor and inductor form a resonator tank for a voltage controlled oscillator (VCO), and wherein the VCO is operable at two frequencies corresponding to the loop being closed and opened.
24. The integrated circuit of claim 23, wherein the capacitor is a variable capacitor.

25. A method of fabricating an integrated circuit (IC), comprising:
forming a primary conductor for an inductor;
forming a secondary conductor in a loop in proximity to the primary conductor;
and

forming a switch in series with the secondary conductor, wherein the switch is operable to open or close the loop to vary inductance of the inductor.

26. The method of 25, further comprising:
forming a current source in series with the secondary conductor and the switch.

27. The method of 25, further comprising:
forming a capacitor in series with the secondary conductor and the switch.

28. The method of 25, further comprising:
forming a third conductor in a second loop in close proximity to the primary conductor; and
forming a second switch in series with the third conductor and operable to open or close the second loop.